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| 10/829,012 | 04/21/2004 | Yasuhiro Enomoto | 0309396 H8156US | 5982 |

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| EXAMINER | |
|---|---|
| YANG, RYAN R | |
| **ART UNIT** | **PAPER NUMBER** |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/829,012 | ENOMOTO, YASUHIRO | |
| | Examiner | Art Unit | |
| | Ryan R. Yang | 2628 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/21/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This action is responsive to communications: Application, filed on 4/21/2004. This action is non-final.

2. Claims 1-11 are pending in this application. Claims 1, 9 and 11 are independent claims.

3. This application claims foreign priority dated 4/30/2003

4. The present title of the invention is "Storage device".

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohno (US 5,704,059).

As per claim 1, Ohno discloses a storage device comprising:

a plurality of memory blocks each including a plurality of cells in correspondence with a data length of image data consisting of first data ("at least one of the start and end addresses of the actual memory area MA1 to MA12 of the area 1 has boundaries that coincide with the boundaries of the segments corresponding to one row address", column 5, line 33-36); and

a selector for simultaneously selecting a specific number of cells for commonly storing a specific number of first data each having a same value which consecutively emerge in the image data ("a plurality of column addresses are selected simultaneously for one row address, and the same data are written to the corresponding memory cells", column 1, line 33-35).

7. As per claim 9, Ohno discloses a method for controlling a storage device that comprises a plurality of memory blocks each including a plurality of cells in correspondence with a data length of image data consisting of a plurality of first data, said method comprising the step of:

simultaneously selecting a specific number of cells for commonly storing a specific number of first data, each having a same value, which consecutively emerge in the image data ("a plurality of column addresses are selected simultaneously for one row address, and the same data are written to the corresponding memory cells", column 1, line 33-35).

8. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoki (US 5,422,995).

As per claim 1, Aoki et al, hereinafter Aoki, discloses a storage device comprising:

a plurality of memory blocks each including a plurality of cells in correspondence with a data length of image data consisting of first data ("upon the time when the data is written into the bit map memory, a bit width of data to be written is to be determined

according to a value of the write repeat counter 76", column 7, line 56-59, where the bit map memory includes memory block and memory cell); and

a selector for simultaneously selecting a specific number of cells for commonly storing a specific number of first data each having a same value which consecutively emerge in the image data ("a bit width of data to be written at a time into the bit map memory 14 is determined according to a value of the write repeat counter 76", column 8, line 3-6, which is operated in RLC operation subcontroller 28).

9. As per claim 8, Aoki demonstrated all the elements as disclosed in the rejected claim 1, and further discloses the first data are pixel data produced by run-length coding on serial data, and the second data are run-length data therefor (since the method disclosed in Aoki is for run length coding).

10. As per claim 9, Aoki discloses a method for controlling a storage device that comprises a plurality of memory blocks each including a plurality of cells in correspondence with a data length of image data consisting of a plurality of first data, said method comprising the step of:

simultaneously selecting a specific number of cells for commonly storing a specific number of first data, each having a same value, which consecutively emerge in the image data ("a bit width of data to be written at a time into the bit map memory 14 is determined according to a value of the write repeat counter 76", column 8, line 3-6, which is operated in RLC operation subcontroller 28).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 2-4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 5,422,995) as applied to claim 9 above, and further in view of Okunishi et al. (US 2002/0027676).

As per claim 2, Aoki demonstrated all the elements as disclosed in the rejected claim 1.

Aoki discloses a method of storing run length data. It is noted that Aoki does not explicitly disclose a first register for storing a first address representing a start point for storing the specific number of first data each having the same value,

an adder for adding second data representing the specific number of the first data each having the same value consecutively repeated in the image data to the first address so as to produce a second address;

a second register for storing the second address, and a controller for controlling the specific number of cells to be selectively and simultaneously placed in a write-enable state based on the first address and the second address.

However, this is known in the art as taught by Okunishi. Okunishi discloses a method of address data in which "from the first address, all data stored in the EEPROM 20 can be read once before the second address for data having the same contents, which is stored at a plurality of addresses, is accessed without reading the same data twice",

[0102]). As for the hardware to implement the method, since the Okuunish discloses a relation between a first address and a second address, it would have been obvious to implement a hardware at the time the invention was made in order to realize such process.

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Okunishi into Aoki because Aoki discloses a method of coding run length data and Okunishi discloses a method of addressing run length in order to shorten processing time.

13. As per claim 3, Aoki and Okunishi demonstrated all the elements as disclosed in the rejected claim 2, and Okunishi further discloses the controller selects the specific number of cells based on a relationship between the first address and the second address with respect to each storage unit, which is set across the plurality of memory blocks in correspondence with the data length of the image data ("from the first address, all data stored in the EEPROM 20 can be read once before the second address for data having the same contents, which is stored at a plurality of addresses, is accessed without reading the same data twice", [0102]).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Okunishi into Aoki because Aoki discloses a method of coding run length data and Okunishi discloses a method of addressing run length in order to shorten processing time.

14. As per claim 4, Aoki and Okunishi demonstrated all the elements as disclosed in the rejected claim 2, and Okunishi further discloses the controller simultaneously selects

the specific number of cells all belonging to a specific storage unit when both of the first address and the second address belong to the specific storage unit ("from the first address, all data stored in the EEPROM 20 can be read once before the second address for data having the same contents, which is stored at a plurality of addresses, is accessed without reading the same data twice", [0102]).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Okunishi into Aoki because Aoki discloses a method of coding run length data and Okunishi discloses a method of addressing run length in order to shorten processing time.

15. As per claim 10, Aoki demonstrated all the elements as disclosed in the rejected claim 9.

Aoki discloses a method of storing run length data. It is noted that Aoki does not explicitly disclose the specific number of cells are defined between a first address and a second address, which is produced by adding second data representing the specific number of the first data each having the same value consecutively repeated in the image data to the first address. However, this is known in the art as taught by Okunishi et al, hereinafter Okunishi. Okunishi discloses a method of address data in which "from the first address, all data stored in the EEPROM 20 can be read once before the second address for data having the same contents, which is stored at a plurality of addresses, is accessed without reading the same data twice", [0102]).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Okunishi into Aoki because Aoki discloses a method of coding run

length data and Okunishi discloses a method of addressing run length in order to shorten processing time.

16. As per claim 11, Aoki discloses a computer-readable medium for storing a method for controlling a storage device that comprises

a plurality of memory blocks each including a plurality of cells in correspondence with a data length of image data consisting of a plurality of first data ("upon the time when the data is written into the bit map memory, a bit width of data to be written is to be determined according to a value of the write repeat counter 76", column 7, line 56-59, where the bit map memory includes memory block and memory cell), said method comprising the step of:

simultaneously selecting a specific number of cells for commonly storing a specific number of first data, each having a same value, which consecutively emerge in the image data ("a bit width of data to be written at a time into the bit map memory 14 is determined according to a value of the write repeat counter 76", column 8, line 3-6, which is operated in RLC operation subcontroller 28).

Aoki discloses a method of storing run length data. It is noted that Aoki does not explicitly disclose the specific number of cells are defined between a first address and a second address, which is produced by adding second data representing the specific number of the first data each having the same value consecutively repeated in the image data to the first address. However, this is known in the art as taught by Okunishi et al, hereinafter Okunishi. Okunishi discloses a method of address data in which ("from the first address, all data stored in the EEPROM 20 can be read once before the

second address for data having the same contents, which is stored at a plurality of addresses, is accessed without reading the same data twice", [0102]).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Okunishi into Aoki because Aoki discloses a method of coding run length data and Okunishi discloses a method of addressing run length data in order to shorten processing time.

17. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki and Okunishi as applied to claim 3 above, and further in view of Elrod et al. (US 5,303,200).

As per claim 5, Aoki and Okunishi demonstrated all the elements as disclosed in the rejected claim 3.

Aoki and Okunishi disclose a method of storing run length data. It is noted Aoki and Okunishi do not explicitly disclose wherein the controller simultaneously selects the specific number of cells, a first one of which is designated by the first address, within a specific storage unit when the first address belongs to the specific storage unit but the second address is set outside of the specific storage unit. However, this is known in the art as taught by Elrod et al, hereinafter Elrod. Elrod discloses a storage device in which the same data is written two different memory blocks (column 10, line 14-15).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Elrod into Okunishi and Aoki because Okunish and Aoki disclose a

method of coding run length data and Elrod discloses a method of addressing run length data in order to access the data through different ports.

18. As per claims 6 and 7, since Elrod discloses that same data could be written into different memory blocks, it would have been obvious to one of ordinary skill at the time the invention was made to try different combination in order to access the data through different port, therefore are similarly rejected as claim 5.

***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Inquiries***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan R Yang whose telephone number is (571) 272-7666. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan Yang
Primary Examiner
June 23, 2007